UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/150,813	09/11/1998	DAVID J. GRAINGER	295.027US1	6933

21186 7590 03/25/2003

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER	
MURPHY, JOSEPH F	

ART UNIT	PAPER NUMBER
1646	

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/150,813	GRAINGER ET AL.	
	Examiner	Art Unit	
	Joseph F Murphy	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21,24-28,31-33,35,40,45,48-50 and 63-83* is/are pending in the application.

4a) Of the above claim(s) *21,24-28,31-33,35,40,45 and 48-50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *63-83* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Formal Matters

Claims 75-83 were added in paper No. 36, 12/19/2002. Claims 21, 24-28, 31-33, 35, 40, 45, 48-50, 63-83 are pending. Claims 21, 24-28, 31-33, 35, 40, 45, 48-50 stand withdrawn from consideration pursuant to 37 CFR 1.142(b). Claims 63-83 are pending and under consideration..

Claim Rejections - 35 USC § 112 first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 63-74 stand rejected, and new claims 75-83 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of inhibiting chemokine induced THP-1 migration by administration of SEQ ID NO: 1, 7, 14 and CRD-CLDPKQKWIQC, does not reasonably provide enablement for a method of preventing or inhibiting an indication of a chemokine induced activity, or an indication associated with a chemokine induced activity by administration of peptides, or a method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site, which encompasses myeloproliferative disorders (Specification at 23, lines 19-24), by the administration of peptides, for reasons of record set forth in Paper No. 34, 9/12/2002.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with

these claims. There is insufficient guidance provided in the instant specification as to how one of ordinary skill in the art would practice a method of preventing or inhibiting an indication of a chemokine induced activity, or an indication associated with a chemokine induced activity, or a method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site, which encompasses myeloproliferative disorders, by the administration of peptides. See In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404. The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. The Wands Court set forth eight factors to consider in the determination of whether a disclosure does not satisfy the enablement requirement and would require undue experimentation. The relevant factors in the instant case are set forth below:

(1) the nature of the invention – Claims 63, 67, 71, 75, 78, 81 are drawn to a method of preventing or inhibiting an indication of a chemokine induced activity, or an indication associated with a chemokine induced activity. Claims 64, 65, 66, 68, 69, 70, 72, 73, 74, 76, 77, 79, 80, 82, 83 are drawn to a method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site. The specification sets forth, on pages 47-49, at least 125 diseases which are encompassed by the terms indication of a chemokine induced activity or hematopoietic cell recruitment. Amongst the many diseases encompassed by the treatment and prevention methods of the claims are multiple sclerosis and myeloproliferative disorders.

(2) the state of the prior art – Amongst the many diseases encompassed by the terms indication of a chemokine induced activity and an indication associated with hematopoietic cell recruitment are MS and myeloproliferative disorder. The prior art teaches that the cause of MS is unknown (Merck Manual at 1474) thus methods of prevention are not known in the art. The prior art teaches methods of treatment of MS are difficult to evaluate, due to spontaneous remissions and fluctuating symptoms (Id. at 1476), but that corticosteroids and interferon-β, and symptomatic therapies are indicated (Id. at 1476). The prior art teaches that the cause of, e.g. myelofibrosis, is unknown (Merck Manual at 900), thus there are no art recognized methods to prevent this myeloproliferative disorder known. Additionally, the Merck Manual (Id. at 901) teaches that there is no therapy to reverse or control the underlying pathologic process. The Merck Manual shows the art does not recognize the nexus between the claimed method of administration of peptides and preventing or inhibiting multiple sclerosis.

Applicant argues that MS has an aberrant or pathological inflammatory component since anti-inflammatory corticosteroids are the main form of therapy for MS. Applicant further argues that fibrosis occurs in the healing stage of inflammation. However, many of the diseases encompassed by the claims do not contain an inflammatory component, and given the broad scope of the claims, i.e. the treatment and prevention of any and all the disease listed in the specification, and further given the art recognized lack of knowledge of the causes of at least two of the encompassed diseases i.e. MS and myeloproloferative disorder, as well as many of the other diseases encompassed by the claims, such as Alzheimer's disease, the prior art cannot be relied upon to provide the enablement for the scope of the claims. One of skill in the art would need to determine the nexus between a chemokine induced activity and an indication associated

with hematopoietic cell recruitment and the development and progression of all the disease states encompassed by the claims, including MS, and myeloproliferative disorder, in order to practice the claimed method of treatment with the peptides. Additionally, the skilled artisan would need to be able to predict the development of the indications such that the peptides could be administered to prevent the development of the indication.

(3) the level of one of ordinary skill - A medical professional would be considered one of ordinary skill in this art.

(4) the level of predictability in the art - the art is such that absent a clear and predictable nexus between the in vitro assays and the expected in vivo outcome commensurate in scope with the encompassed diseases, it would require undue experimentation to practice this method of preventing or inhibiting an indication of a chemokine induced activity, or an indication associated with a chemokine induced activity, or a method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site.

Applicant argues that the specification is predictable because it teaches in vitro and in vivo assays to determine whether a particular chemokine agent is effective, and that thus one of skill in the art can extrapolate the results of those assays to methods of treatment and prevention. However, this is not an indication of predictability, because the assays disclosed are not representative of any and all the listed diseases. One of skill in the art would need to determine the appropriate model system for all the diseases listed in the specification, then determine if the peptides were active in those assays. In addition, one of skill in the art would need to have

foreknowledge of the appearance of any and all the diseases in order to prevent the appearance of the disease in a mammal.

(5) the amount of direction provided by the inventor - the specification has provided insufficient guidance to the skilled artisan to practice a method of preventing or inhibiting an indication of a chemokine induced activity, or an indication associated with a chemokine induced activity, or method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site. The specification sets forth, on pages 47-49, at least 125 diseases which are encompassed by the terms indication of a chemokine induced activity or hematopoietic cell recruitment. Applicant argues that the specification provides exemplary in vitro and in vivo assays to determine whether a particular chemokine peptide inhibits or reduces a chemokine-induced activity. However, the nexus between a chemokine induced activity and all the disease states has not been shown. One of skill in the art would need to determine the role of chemokines in the appearance and development of all the disease states encompassed by the claims, i.e. all the disease listed on pages 47-49. Then the skilled artisan would need to develop models for all the disease states, then screen Applicant's peptides to determine whether those compounds would treat those diseases. Furthermore, the skilled artisan would need to be able to have foreknowledge of the appearance of a chemokine induced indication, in order to prevent the appearance of the indication in a mammal.

(6) the existence of working examples - there are no working examples provided in the specification for a method of preventing or inhibiting an indication of a chemokine induced

activity, or an indication associated with a chemokine induced activity, or a method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site.

Applicant argues that none are necessary because one of skill in the art would be able to use the assays provided to determine if a particular peptide would prevent or inhibit the chemokine induced indication. However, as set forth above, one of skill in the art would need to determine the role of chemokines in the appearance and development of all the disease states encompassed by the claims. Then the skilled artisan would need to develop models for all the disease states, then screen Applicant's peptides to determine whether those compounds would treat those diseases. Furthermore, the skilled artisan would need to be able to have foreknowledge of the appearance of a chemokine induced indication, in order to prevent the appearance of the indication in a mammal.

(7) the quantity of experimentation needed to make or use the invention based on the content of the disclosure - the quantity of experimentation would be undue because the skilled artisan would need to determine the role of chemokines in the appearance and development of all the disease states encompassed by the claims, then develop appropriate models for all the disease states, then run the assays to determine whether the peptides are active in treating the indication. Additionally, the skilled artisan would need to be able to predict the appearance of a chemokine induced indication, in order to prevent the appearance of the indication in a mammal

Therefore, given the state of the art, it would require undue experimentation for one of skill in the art to practice a method of preventing or inhibiting an indication of a chemokine induced activity, or an indication associated with a chemokine induced activity, or a method of preventing or inhibiting an indication associated with hematopoietic cell recruitment, a method to enhance or increase hematopoietic cell-associated activity at a tumor site, or a method to modulate the chemokine induced activity of hematopoietic cells at a preselected physiological site, by the administration of the disclosed peptides.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

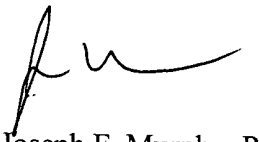
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Advisory Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph F. Murphy whose telephone number is 703-305-7245. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 703-308-6564. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-308-0294 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.



Joseph F. Murphy, Ph. D.
Patent Examiner
Art Unit 1646
March 24, 2003